

Claims

[c1] WHAT IS CLAIMED IS:

1.A snap-in cluster attachment for attaching the lower edge of a cluster housing to an IP retainer comprising:
a)at least one attachment member fixedly attached to the lower edge of the cluster housing, said attachment member comprising a body having two ends and two sides wherein one end is attached to the lower edge of the cluster housing and the other end terminates in a mounting pin oriented perpendicular to the sides of the attachment member; and
b)at least one corresponding opening in the IP retainer having mounting pin retaining members disposed therein for receiving and holding the mounting pin of the at least one attachment member;
thereby providing for attaching the cluster housing lower edge to the IP retainer by snapping the at least one mounting pin on the lower edge of the cluster housing into place in the corresponding at least one IP retainer opening having mounting pin retaining members located therein.

[c2] 2.The snap-in cluster attachment as claimed in Claim 1,

wherein said snap-in cluster attachments allow the cluster housing to be rolled upward for fixedly attaching the cluster housing by its top edge to the IP retainer.

- [c3] 3.The snap-in cluster attachment as claimed in Claim 1, wherein said at least one attachment member and at least one corresponding opening comprises 2 or more attachment members and 2 or more corresponding openings.
- [c4] 4.The snap-in cluster attachment as claimed in Claim 1, wherein said attachment members are molded as an integral part of the cluster housing.
- [c5] 5.The snap-in cluster attachment as claimed in Claim 1, wherein said openings in the IP retainer having mounting pin retaining members disposed therein are molded as an integral part of said IP retainer.
- [c6] 6.The snap-in cluster attachment as claimed in Claim 1, wherein said mounting pin has a diameter of from about 2.0 mm to about 10.0 mm, preferably about 5.0 mm.
- [c7] 7.The snap-in cluster attachment as claimed in Claim 1, wherein said mounting pin retaining members have a wall thickness of from about 1.0 mm to about 5.0 mm, preferably 3.0 mm.

- [c8] 8.The snap-in cluster attachment as claimed in Claim 1, wherein said cluster housing and said attachment member are composed of styrene.
- [c9] 9.The snap-in cluster attachment as claimed in Claim 1, wherein said IP retainer and said mounting pin retaining members consist essentially of a material selected from the group acrylonitrile butadiene styrene (ABS), polycarbonate acrylonitrile butadiene styrene (PC/ABS), Norel, polypropylene, and other engineered materials.
- [c10] 10.A snap-in cluster attachment for attaching the lower edge of an instrument cluster housing to an IP retainer comprising:
- a)at least one attachment member fixedly attached to the lower edge of the instrument cluster housing, said attachment member comprising a body having two ends and two sides wherein one end is attached to the lower edge of the instrument cluster housing and the other end terminates in a mounting pin oriented perpendicular to the sides of the attachment member; and
 - b)at least one corresponding opening in the IP retainer having mounting pin retaining members disposed therein for receiving and holding the mounting pin of the at least one attachment member;
- thereby providing for attaching the instrument cluster housing lower edge to the IP retainer by snapping the at

least one mounting pin on the lower edge of the instrument cluster housing into place in the corresponding at least one IP retainer opening having mounting pin retaining members located therein.

- [c11] 11.The snap-in instrument cluster attachment as claimed in Claim 10, wherein said snap-in cluster attachments allow the instrument cluster housing to be rolled upward for fixedly attaching the cluster housing by its top edge to the IP retainer.
- [c12] 12.The snap-in instrument cluster attachment as claimed in Claim 10, wherein said at least one attachment member and at least one corresponding opening comprises 2 or more attachment members and 2 or more corresponding openings.
- [c13] 13.The snap-in instrument cluster attachment as claimed in Claim 10, wherein said attachment members are molded as an integral part of the instrument cluster housing.
- [c14] 14.The snap-in instrument cluster attachment as claimed in Claim 10, wherein said openings in the IP retainer having mounting pin retaining members disposed therein are molded as an integral part of said IP retainer.
- [c15] 15.The snap-in cluster attachment as claimed in Claim

10, wherein said mounting pin has a diameter of from about 2.0 mm to about 10.0 mm, preferably about 5.0 mm.

[c16] 16.The snap-in cluster attachment as claimed in Claim 10, wherein said mounting pin retaining members have a wall thickness of from about 1.0 mm to about 5.0 mm, preferably 3.0 mm.

[c17] 17.The snap-in cluster attachment as claimed in Claim 10, wherein said cluster housing and said attachment member are composed of styrene.

[c18] 18.The snap-in cluster attachment as claimed in Claim 10, wherein said IP retainer and said mounting pin retaining members consist essentially of a material selected from the group acrylonitrile butadiene styrene (ABS), polycarbonate acrylonitrile butadiene styrene (PC/ABS), Norel, polypropylene, and other engineered materials.